

METHOD AND APPARATUS FOR TREATING A PRODUCTIVE ZONE WHILE DRILLING

ABSTRACT OF THE INVENTION

The present invention is directed to a method and apparatus for delivering a well treatment fluid to a productive zone of a subterranean formation at the same time that a well bore is being drilled. The method includes the steps of delivering a drill-in fluid to a drill bit drilling a well bore in, or adjacent to, the productive zone; removing drill cuttings from the well bore; and simultaneous with these steps injecting the treatment fluid into the productive zone. The apparatus includes at least three nested tubes, which form one internal flow path and two annuluses. The drill-in fluid and drill cuttings are delivered to, and removed from, the drill bit, respectively, through the internal flow path and one of the two annuluses. The treatment fluid is delivered to the subterranean formation through the remaining annulus and an expandable bladder mounted to the intermediate and outer tubes.